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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,252	04/20/2001	Yoshihito Asao	Q63652	9317

7590

03/28/2002

SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER

LAM, THANH

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 03/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/838,252

Applicant(s)

Asao et al.

Examiner

Thanh Lam

Art Unit

2834



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2&4
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

Art Unit: 2834

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

Art Unit: 2834

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 3-4, 6, and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asao et al. (USPN 6,049,154) in view of Kitamura et al. (USPN. 4,739,204)

Asao et al. disclose (see figs. 7-14) an automotive alternator comprising: a stator (1) having a stator core (2) formed with slots (2a) extending axially at a predetermined pitch in a circumferential direction and a stator winding (3) installed in said stator core;

wherein a coil end group (3A-C) of said stator winding is constructed such that coil ends folded back outside said slots at an end surface (the last laminated sheet of the core 2) of said stator core are arranged circumferentially, wherein a predetermined region of outer surfaces (3b) of said coil ends in a radial direction of said stator core, and said outer surfaces facing radially outwards from said stator core and extending from a vicinity of said end surface of said stator core to apex portions (top portion of 3) of said coil ends,

Kitamura et al. disclose a rotor (21) rotatably disposed on an inner circumferential side of a stator (10); and a bracket (30) for supporting said stator and said rotor, and wherein a distribution channel (32b) is formed inside said bracket for a liquid coolant is disposed for absorbing heat generated in said stator and conducted from a circumferentially-smooth heat-conducting surface (24).

Art Unit: 2834

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the outer surfaces of the end coils of Asao et al. and fit a circumferentially smooth heat-conducting surface as taught by Kitamura et al. to improve heat conducting from the end coils to the cooling channel.

Regarding claim 3, Kitamura et al. disclose said distribution channel is constituted by a tube (28) composed of a thermally conductive material, a portion of said tube being disposed in a state of general contact with said heat-conducting surface of said coil end group.

Regarding claim 4, Asao et al. disclose said stator winding (3) is provided with a plurality of winding sub-portions (3A-C) each constructed by installing a strand of wire (4) at intervals of a predetermined number of slots to alternately occupy an inner layer and an outer layer in a slot (2a) depth direction within said slots, turn portions of said strand of wire which are folded back outside said slots at said end surface of said stator core forming said coil ends and lining up generally uniformly in a circumferential direction to constitute said coil end group.

Regarding claim 6, Asao et al. disclose said turn portions are disposed circumferentially to line up in a plurality of rows radially, radially-adjacent turn portions being in general contact with each other.

Regarding claim 8, Asao et al. disclose said turn portions are disposed circumferentially such that intermediate portions of said turn portions are in close proximity with each other, said intermediate portions being between portions where said turn portions extend out from said slots and portions where said turn portions are folded back.

Art Unit: 2834

Regarding claim 9, Asao et al. disclose a resin is filled between said turn portions such that a surface of said resin is positioned in a common plane with a surface of said strand of wire, said heat-conducting surface being constituted by a smooth surface composed of said surface of said strand of wire and said surface of said resin.

Regarding claim 10, Asao et al. disclose said strand of wire is a continuous wire.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asao et al. in view of Kitamura et al. as applied to claim 1 above, and further in view of Adachi.

Asao et al. and Kitamura et al. disclose every aspect of claimed invention except a thermally-conductive resin being filled between said coil end group and said bracket in a state of general contact with said heat-conducting surface.

Regarding claim 2, Adachi discloses a thermally-conductive resin (30) being filled between said coil end group (7) and said bracket (12) in a state of general contact with said heat-conducting surface.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the end coil group of Asao et al. and the frame of Kitamura et al. and provide the thermally-conductive resin therebetween to improve heat conducting between the end coils and the frame.

6. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asao et al. in view of Kitamura et al. as applied to claims 1, 4, and 6 above, and further in view of Ishida.

Application/Control Number: 09838252

Page 6

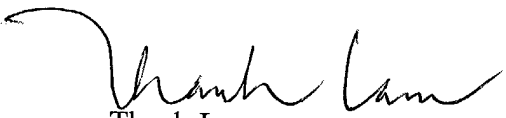
Art Unit: 2834

Regarding claims 5 and 7, Asao et al. and Kitamura et al. disclose the claimed invention except for the strand of wire is formed with a rectangular cross-sectional shape. Ishida teaches that it is known to the art as set forth at indicated numeral 27-29 of fig. 3. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the wire of Asao et al. with a rectangular cross-sectional shape, as taught by Ishida to provide an ease to assembly of the coils.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Lam whose telephone number is (703) 308-7626. The fax phone number for this Group is (703) 305-3431.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0656.



Thanh Lam

Patent Examiner

March 21, 2002